

Title:

DRUG SANCTUARIES, LOW STEADY STATE VIRAL LOADS AND
VIRAL BLIPS

LA-VR-02-1472
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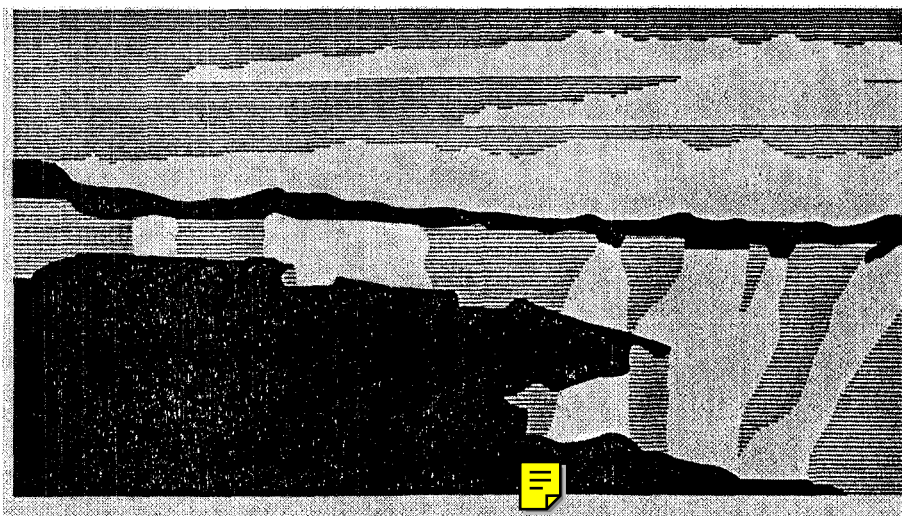
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Submitted:

9th HIV Variation & Dynamic Meeting,
Lake Arrowhead, CA
March 17-20, 2002

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DRUG SANCTUARIES, LOW STEADY STATE VIRAL LOADS AND VIRAL BLIPS

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Patients on HAART for long periods of time obtain viral loads (VLs) below 50 copies/ml. Ultrasensitive VL assays show that some of these patients obtain a low steady state VL, while others continue to exhibit VL declines to below 5 copies/ml. Low steady states can be explained by two-compartment models that incorporate a drug sanctuary. Interestingly, when patients exhibit continued declines below 50 copies/ml the rate of decline has a half-life of ~ 6 months, consistent with some estimates of the rate of latent cell decline. Some patients, despite having sustained undetectable VLs show periods of transient viremia (blips). I will present some statistical characterization of the blips observed in a set of 123 patients, suggesting that blips are generated largely by random processes, that blips tend to correspond to periods of a few weeks in which VLs are elevated, and that VL decay from the peak of a blip may have two-phases. Using new results suggesting that the viral burst size, $N \sim 5 \times 10^4$, we estimate the number of cells needed to produce a blip.

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